Success Stories – Siting Renewable Energy on Contaminated Land

# Belmar Mixed Use Development, Lakewood, Colorado

*Mixed Use Development with Largest Rooftop Solar Array in U.S. Replaces Contaminated Site*

## Site Description

Belmar is a planned mixed-use development located 10 minutes from downtown Denver in Lakewood, Colorado. The development covers 22 city blocks on what was once an abandoned shopping mall surrounded by asphalt parking lots. Today, the area is a thriving city center that uses its facilities to produce renewable energy.

## Property History

The project site was the former site of the Villa Italia Mall, a vacant indoor shopping center located in a blighted neighborhood. Villa Italia opened to great fanfare in 1966, but its popularity declined over time and by the mid 1990s, most of the stores were empty. Before redevelopment could take place, the mall site required cleanup of soil contaminated over the years with perchloroethylene (PCE) from two dry cleaning businesses located in the mall.

The Colorado Coalition, a collaborative redevelopment effort between the state and seven local governments, received $5.1 million in a Revolving Loan Fund (RLF) grant from EPA's Brownfields Program. The Coalition uses this RLF funding to make low-interest loans for local Brownfields cleanup activities. In 2002, the Coalition issued a $1.95 million loan to Continuum Partners, a private developer, for the cleanup and redevelopment of the mall site. The developer demolished the mall, removed soil and treated ground water contaminated with PCE before developing the site. Completed in 2005, redevelopment of the property gave Lakewood its first walkable downtown area, concentrated around Lakewood's municipal buildings. The Belmar mixed-use development includes commercial development, shops, restaurants, entertainment and homes. The development also incorporates renewable energy through solar photovoltaic arrays atop three parking structures.

**QUICK FACTS:**

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| Location: | EPA Region 8, Jefferson County, CO |
| Property Size: | 47.5 acres |
| Site Ownership: | Mixed private/public |
| Former Use: | Indoor shopping center |
| Contaminants: | Perchloroethylene (PCE) |
| Project Type: | Brownfields |
| Type of RE: | Solar PV |
| Project Cost: | Not publicly available |
| Key Partners: | The Colorado Coalition; Continuum Partners, LLC; City of Lakewood; EPA Region 8 |
| Current Status: | Completed October 2008 |

**PROJECT HIGHLIGHTS:**

- Urban Brownfields site restored to productive use as walkable mixed-use development.
- 1.7 MW solar PV system mounted on three parking structures provides 5% of commercial center's electricity need, equivalent to 350 average homes.
- Solar panels cover 190,000 square feet, the largest rooftop solar array in the United States.
- Long-term power-purchase agreement with utility exchanges renewable energy credits for below-retail electricity rates.

## Renewable Energy Development

California-based Sun Power, Inc., designed and installed 8,300 photovoltaic (PV) solar panels on the parking structure roofs, covering 190,000 square feet. The 1.7 megawatt (MW) array was completed in October 2008. The array generates approximately 2.3 million kilowatt-hours of renewable energy annually, and supplies all the electricity for the parking garages, equivalent to 5% of Belmar's energy use. In addition, the Belmar development employs solar-powered parking meters and street lighting powered by wind turbines on light poles.

In 2008, Belmar collaborated with MMA Renewable Ventures, leveraging tax credits and incentives to finance the solar PV system. The solar parking structure was deployed under a long-term power-purchase agreement, in which electricity sold to Belmar is competitively priced against retail rates, providing the development with a long-term hedge against rising peak power prices. The Belmar solar project received a rebate to offset upfront construction costs, as part of the Xcel Energy Solar Rewards Program. Xcel will purchase the renewable energy credits produced at Belmar in support of Colorado's Renewable Energy Standard, which requires large utilities to generate 20 percent of their power from renewable sources by 2020.



CONTACT: Continuum Partners, LLC: Stephanie Jackson, (303) 742-1528, stephj@continuumllc.com
U.S. EPA Region 8: Tom Pike, Project Officer, (303) 692-3398